

What is claimed:

1. A method of redirecting data from a host system to a mobile communication device capable of communicating via a short-range wireless communication network and a long-range wireless communication network, the method comprising the steps of:

receiving data at the host system;

determining whether the mobile communication device is within coverage of the short-range wireless communication network;

if the mobile communication device is within coverage of the short-range wireless communication network, then redirecting the received data from the host system to the mobile communication device via the short-range wireless communication network; and

if the mobile communication device is not within coverage of the short-range wireless communication network, then redirecting the received data from the host system to the mobile communication device via the long-range wireless communication network.

2. The method of claim 1, further comprising the steps of:

the mobile communication device transmitting contact information to the short-range wireless communication network indicating it is within coverage of the short-range wireless communication network; and

transmitting the contact information to the host system indicating that the mobile communication device is within coverage of the short-range wireless communication network.

3. The method of claim 2, further comprising the steps of:

the short-range wireless network detecting that the mobile communication device is outside of coverage of the short-range wireless network; and

transmitting lack of contact information to the host system indicating that the mobile communication device is outside of coverage of the short-range wireless communication network.

4. The method of claim 3, further comprising the step of:

storing the contact information and the lack of contact information at the host system.

5. The method of claim 1, wherein the host system is coupled to the short-range wireless network via a local area network (LAN), and wherein the short-range wireless network includes a plurality of wirelessly-enabled interface cradles, the method further comprising the steps of:

providing a user profile database at the host system, the user profile database including identification information for a plurality of mobile communication devices, and also including contact information and lack of contact information for each of the plurality of mobile communication devices.

6. The method of claim 5, further comprising the steps of:

receiving contact information at the host system, the contact information including the identity of a particular mobile communication device and a network address on the LAN for a particular wirelessly-enabled interface cradle;

storing the contact information in the user profile database;

associating the received data to the particular mobile communication device; and

redirecting the received data to the particular wirelessly-enabled interface cradle using the contact information stored in the user profile database.

7. The method of claim 6, further comprising the step of:

transmitting the received data from the particular wirelessly-enabled interface cradle to the particular mobile communication device.

8. The method of claim 1, wherein the determining step further comprises the step of:

when the mobile communication device is within the physical proximity of the short-range wireless network, generating contact information;

transmitting the contact information to the host system; and

using the contact information to determine whether the mobile communication device is within coverage of the short-range wireless network.

9. The method of claim 8, wherein the determining step further comprises the steps of:

when the mobile communication device is not within the physical proximity of the short-range wireless network, generating lack of contact information;
transmitting the lack of contact information to the host system; and
using the lack of contact information to determine whether the mobile communication device is within coverage of the short-range wireless network.

10. The method of claim 1, wherein the determining step further comprises the steps of:

placing the mobile communication device in an interface cradle coupled to the short-range wireless network;
generating contact information indicating that the mobile communication device is physically connected to the short-range wireless network;
transmitting the contact information to the host system; and
using the contact information to determine whether the mobile communication device is within coverage of the short-range wireless network.

11. The method of claim 1, wherein the determining step further comprises the steps of:

activating a screen saver program at the host system; and
if the screen saver program is activated, then determining that the mobile communication device is not within coverage of the short-range wireless network.

12. The method of claim 1, wherein the determining step further comprises the steps of:

detecting whether a user of the mobile communication device is in physical proximity to the short-range wireless network.

13. The method of claim 12, wherein the detecting step further comprises the steps of:

providing a heat sensor in physical proximity to the short-range wireless network;

and

detecting the physical presence of the user of the mobile communication device using the heat sensor.

14. The method of claim 12, wherein the detecting step further comprises the steps of:

providing a visual image sensor in physical proximity to the short-range wireless network; and

detecting the physical presence of the user of the mobile communication device using the visual image sensor.

15. The method of claim 1, wherein the short-range wireless network includes a plurality of Bluetooth-enabled wireless devices coupled to a network.

16. The method of claim 15, wherein the plurality of Bluetooth-enabled wireless devices are interface cradles capable of physically and electrically connecting to the mobile communication device.

17. The method of claim 1, wherein the short-range wireless network includes a plurality of RF-enabled interface cradles coupled to a local area network (LAN).

18. The method of claim 17, further comprising the steps of:

as the mobile communication device comes within RF coverage of one of the RF-enabled interface cradles, generating contact information indicating that the mobile communication device is capable of communicating with the one RF-enabled interface cradle, the contact information including an electronic address of the one RF-enabled interface cradle on the LAN; and

redirecting the received data to the one RF-enabled interface cradle using the contact information.

19. The method of claim 18, further comprising the steps of:

as the mobile communication device moves out of RF coverage of the one RF-enabled interface cradle, generating lack of contact information indicating that the mobile communication device is not capable of communicating with the one RF-enabled interface cradle; and

redirecting the received data to the long-range wireless network until the mobile communication device moves into RF coverage of the one RF-enabled interface cradle.

20. The method of claim 18, further comprising the steps of:

as the mobile communication device moves out of RF coverage of the one RF-enabled interface cradle and into RF coverage of a second RF-enabled interface cradle, generating contact information indicating that the mobile communication device is

capable of communicating with the second RF-enabled interface cradle, the contact information including an electronic address of the second RF-enabled interface cradle on the LAN; and

redirecting the received data to the second RF-enabled interface cradle using the contact information.

21. The method of claim 1, further comprising the steps of:

providing a mobile communication device having two wireless components, a first wireless component worn on the belt of a user and a second wireless component worn in the user's ear;

the received data at the host system including at least one voice call and at least one data message; and

redirecting the voice call to the second wireless component of the mobile communication device and redirecting the data message to the first wireless component of the mobile communication device.

22. The method of claim 21, further comprising the steps of:

redirecting the voice call from the host system to the first wireless component of the mobile communication device; and

redirecting the voice call from the first wireless component to the second wireless component of the mobile communication device.

23. The method of claim 1, wherein the long-range wireless network is the Mobitex network, the GSM/GPRS network, or the CDMA network.

24. The method of claim 1, further comprising the steps of:

physically and electrically connecting the mobile device to the short-range wireless network;

exchanging a shared secret between the physically and electrically connected mobile device and the host system; and

using the shared secret to encrypt the received data prior to redirecting it from the host system to the mobile device.

25. The method of claim 24, further comprising the steps of:

configuring a security password and storing the security password at the host system;

after the mobile device has been physically and electrically connected to the short-range wireless network, prompting a user of the mobile device to enter the security password; and

if the entered security password matches the stored security password, then generating the shared secret.

26. The method of claim 24, wherein the mobile device includes at least two wireless components, a first wireless component worn on the belt of a user and a second wireless component worn in the user's ear, the method further comprising the step of:

storing the shared secret in the first wireless component of the mobile device;
detecting whether the second wireless component of the mobile device is
physically and electrically connected to the first wireless component of the mobile
device;

providing the shared secret to the second wireless component of the mobile
device; and

using the shared secret to encrypt and decrypt communications between the first
wireless component and the second wireless component of the mobile device.

27. The method of claim 1, wherein the short-range wireless network includes a plurality
of office-specific short-range wireless networks, each office-specific short-range wireless
network including a plurality of RF-enabled interface devices for generating a plurality of
pico-cells within a particular office space, the method further comprising the steps of:

providing a virtual private network for coupling the plurality of office-specific
short-range wireless networks;

if the mobile device is within coverage of the short-range wireless network, then
determining in which office space the mobile device is located; and

redirecting the received data from the host system to the office-specific short-
range wireless network for the particular office space where the mobile device is located
via the virtual private network.

28. The method of claim 27, further comprising the steps of:

maintaining contact information at the host system, the contact information indicating the office space where the mobile device is located and also indicating the network address of the RF-enabled interface device with which the mobile device is communication; and

providing this contact information to each of the office-specific short-range wireless networks.

29. The method of claim 1, wherein the host system is a desktop computer system, and the short-range wireless communication network includes at least one RF-enabled interface cradle coupled to the desktop computer system.

30. The method of claim 1, wherein the host system is a network server, and the short-range wireless communication network includes a plurality of RF-enabled interface cradles coupled to the network server via a local area network.

31. The method of claim 1, further comprising the steps of:

providing two communication paths within the short-range wireless communication network for communicating with the mobile device;

determining which of the two communication paths is least congested; and

selecting the communication path that is least congested for redirecting data to the mobile device.

32. A method of routing data from a host system to a mobile device, comprising the steps of:

providing a short-range wireless network having a first coverage area;

providing a long-range wireless network having a second coverage area which overlaps with and is larger than the first coverage area;

determining whether the mobile device is within the first coverage area;

if the mobile device is within the first coverage area, then routing data received at the host system for a user of the mobile device to the mobile device via the short-range wireless network; and

if the mobile device is not within the first coverage area, then routing data received at the host system for a user of the mobile device to the mobile device via the long-range wireless network.

33. The method of claim 32, wherein the determining step further comprising the step of detecting whether the user of the mobile device is within physical proximity to the host system.

34. The method of claim 33, wherein the detecting step is accomplished using a heat sensor or a visual image sensor coupled to the host system.

35. The method of claim 32, wherein the short-range wireless network includes a plurality of RF-enabled interface cradles, the method further comprising the steps of:

placing the mobile device in contact with one of the RF-enabled interface cradles;

entering a security password into the mobile device;

if the entered security password is valid, then exchanging a shared secret between the mobile device and the host system; and

using the shared secret to encrypt and decrypt communications between the host system and the mobile device.

36. The method of claim 32, wherein the determining step further comprises the steps of:

if the mobile device comes within the first coverage area, then generating contact information indicating that the mobile device is within the first coverage area; and

providing the contact information to the host system.

37. The method of claim 32, wherein the mobile device includes two wireless components, a first wireless component for transmitting and receiving data messages and a second wireless component for transmitting and receiving voice calls, the method further comprising the steps of:

routing voice calls received at the host system to the second wireless component of the mobile device; and

routing data messages received at the host system to the first wireless component of the mobile device.

38. The method of claim 37, wherein both the first and second wireless components are capable of communication over the short-range wireless network.

39. The method of claim 37, further comprising the steps of:

detecting that the second wireless component is physically and electrically connected to the first wireless component; and
routing voice calls from the host system to a voice mail system account associated with the user of the mobile device.

40. The method of claim 39, wherein the second wireless component includes a rechargeable battery and a short-range wireless transceiver, the method further comprising the step of:

recharging the rechargeable battery of the second wireless component using a power source in the first wireless component when the second wireless component is physically and electrically connected to the first wireless component.

41. A system for redirecting data to a mobile device having a long-range transceiver and a short-range transceiver, comprising:

a redirector program for receiving data associated with a user of the mobile device and for redirecting the received data to the mobile device;

a long-range wireless network for communicating data to the long-range transceiver in the mobile device; and

a short-range wireless network for communicating data to the short-range transceiver in the mobile device;

wherein the system determines whether the mobile device is within a coverage area of the short-range wireless network, and if so, instructs the redirector program to redirect the received data to the mobile device via the short-range wireless network, and if not, instructs the redirector program to redirect the received data to the mobile device via the long-range wireless network.

42. The system of claim 41, wherein the short-range wireless network includes at least one RF-enabled interface cradle for communicating with the short-range transceiver of the mobile device.

43. The system of claim 42, wherein the at least one RF-enabled interface cradle is coupled to the redirector program via a host system.

44. The system of claim 43, wherein the redirector program is operating at the host system, and wherein the at least one RF-enabled interface cradle is coupled to the host system via a local area network.

45. The system of claim 41, wherein the short range wireless network includes a plurality of RF-enabled interface cradles for communicating with the short-range transceiver of the mobile device.

46. The system of claim 45, wherein the plurality of RF-enabled interface cradles are coupled to the redirector program via a local area network.

47. The system of claim 46, wherein the redirector program is operating at a network server coupled to the local area network.

48. The system of claim 47, wherein the redirector program is capable of redirecting data to a plurality of mobile devices.

49. The system of claim 41, wherein the short-range wireless network includes a plurality of office-specific short-range wireless sub-networks, each office-specific short-range wireless sub-network including a plurality of RF-enabled interface cradles for communicating with the short-range RF transceiver of the mobile device.

50. The system of claim 49, wherein the plurality of office-specific short-range wireless sub-networks are connected via a virtual private network.

51. The system of claim 50, wherein the virtual private network is implemented over the Internet.

52. The system of claim 42, wherein the at least one RF-enabled interface cradle detects whether the mobile device is within its proximity and generates contact information which is provided to the redirector program.

53. The system of claim 52, wherein the contact information includes an electronic address of the at least one RF-enabled interface cradle.

54. The system of claim 41, wherein the short-range wireless network includes a plurality of Bluetooth-enabled interface devices.

55. The system of claim 42, wherein the at least one RF-enabled interface cradle includes an interface for electrically and physically coupling to the mobile device.

56. The system of claim 55, further comprising:

means for detecting that the mobile device is coupled to the interface of the at least one RF-enabled interface cradle; and

means for exchanging a shared secret between the mobile device and the redirector program when the mobile device is coupled to the interface of the at least one RF-enabled interface cradle.

57. The system of claim 41, wherein the mobile device is a cellular telephone, a two-way pager, or a personal digital assistant.

58. The system of claim 41, further comprising:

means for detecting short-range RF communications from the mobile device and for generating contact information that is provided to the system.

59. The system of claim 58, wherein the means for detecting includes an RF-enabled interface device coupled to the short-range wireless network for receiving short-range RF communications from the mobile device.

60. The system of claim 41, further comprising:

a sensor for detecting the physical presence of a user of the mobile device within the proximity of the short-range wireless network.

61. The system of claim 60, wherein the sensor is a heat sensor or a visual image sensor.

62. The system of claim 41, wherein the redirector program encrypts the received data with a shared secret prior to redirecting it to the mobile device.

63. The system of claim 62, further comprising:

means for detecting that the mobile device is physically and electrically connected to a secure connection to the redirector program; and

means for exchanging the shared secret between the mobile device and the redirector program.

64. The system of claim 41, wherein the mobile device includes a first wireless component and a second wireless component, wherein the first wireless component includes a short-range RF transceiver and a long-range RF transceiver, and wherein the second wireless component includes a short-range RF transceiver.

65. The system of claim 64, wherein the first component of the mobile device is worn on a user's belt, and the second component of the mobile device is worn in the user's ear.

66. The system of claim 65, wherein voice calls are redirected to the second component of the mobile device and data messages are redirected to the first component of the mobile device.

67. The system of claim 66, wherein voice calls are redirected directly from the short-range wireless network to the second component of the mobile device.

68. The system of claim 66, wherein voice call are redirected from the short-range wireless network to the first component of the mobile device and then from the first component of the mobile device to the second component of the mobile device.

69. The system of claim 65, wherein the first component of the mobile device includes an interface for physically and electrically contacting the second component of the mobile device.

70. The system of claim 69, wherein the first and second components include rechargeable batteries, and wherein the rechargeable battery of the second component is recharged by the rechargeable battery of the first component when the second component is placed in the interface of the first component.

71. The system of claim 69, wherein the first component can communicate information to the second component via the interface.

72. The system of claim 69, wherein the second component includes a microphone and a speaker, and the first component includes a natural language voice interface, wherein a user of the mobile device can voice commands to the first component by speaking into the microphone of the second component.

73. The system of claim 72, wherein the voice commands include redirection commands that are transmitted by the first component back through the short-range wireless network or the long-range wireless network to the redirector program.

74. A mobile communicator, comprising:

a first wireless component having a housing with an external interface, and including a long-range RF transceiver and a short-range RF transceiver, wherein the long-range RF transceiver is used to communicate with a long-range wireless network and the short-range RF transceiver is used to communication with a short-range wireless network; and

a second wireless component detachably coupled to the external interface of the housing, the second wireless component include a short-range RF transceiver for communicating with either the short range wireless network or the short-range RF transceiver of the first wireless component.

75. The mobile communicator of claim 74, wherein the external interface provides a physical and electrical coupling between the first wireless component and the second wireless component.

76. The mobile communicator of claim 74, wherein the second wireless component includes a speaker and a microphone.

77. The mobile communicator of claim 76, wherein the second wireless component is configured for placement into the ear of a user.

78. The mobile communicator of claim 74, wherein the second wireless component includes a rechargeable battery.

79. The mobile communicator of claim 78, wherein the second wireless component includes a processor for controlling the short-range RF transceiver.

80. The mobile communicator of claim 74, wherein the short-range RF transceiver of the second wireless component is enabled when the second wireless component is detached from the first wireless component.

81. The mobile communicator of claim 74, wherein the mobile communicator is a cellular telephone, a two-way pager or a personal digital assistant.

82. The mobile communicator of claim 75, wherein the first and second wireless components can exchange information via the respective short-range RF transceivers or via the external interface.

83. The mobile communicator of claim 82, wherein encryption information is exchanged between the first and second wireless components only when the second wireless component is attached to the external interface of the first wireless component.

84. The mobile communicator of claim 74, wherein the first wireless component includes a processor, a QWERTY keyboard for entering messages into the mobile communicator, a display, and a thumbwheel input device for navigating and selecting information presented on the display.

85. The mobile communicator of claim 84, wherein the first wireless component includes a serial interface for electrically coupling the first wireless component to an interface cradle.